

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

LAKE SUPERIOR STATE-LICENSED COMMERCIAL FISHERY REPORT 2021

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BACKGROUND

The Wisconsin waters of Lake Superior are relatively shallow with a high degree of habitat complexity (e.g., Apostle Islands) compared to much of Lake Superior, and this habitat supports a highly productive ecosystem and successful commercial fishery. Over the past 25 years, the Wisconsin Department of Natural Resources (DNR) and Red Cliff and Bad River Bands of Lake Superior Chippewa have moved toward a smaller and better-regulated commercial fishery. Today, the Lake Whitefish and Cisco (Lake Herring) fisheries comprise the majority of the catch and value of the Lake Superior commercial fishery, and these species are targeted using a combination of trap nets and gill nets. Since reaffirmation of Treaty fishing rights in the Ceded Territory, the DNR has maintained a Lake Superior Fishing Agreement with both Red Cliff and Bad River Bands of Lake Superior Chippewa which stipulates several management practices for fisheries in Wisconsin waters of Lake Superior. The Agreement includes methods for harvest limitations, commercial gear limitations, commercial fishing seasons, designated refuges, restrictive use areas, law enforcement patrols, commercial monitoring and exchange of data and information for all parties.

State-licensed commercial fishers in Wisconsin waters of Lake Superior chiefly operate out of ports in Bayfield, Cornucopia and Port Wing. Commercial fishers report all harvest and fishing effort to the DNR, and in addition, team members collect fish biological data onboard commercial fishing vessels and dockside at commercial fishing facilities. Wisconsin commercial fishing management is built on three principles: limited entry, annual harvest and gear limitations, and individual transferable quotas.

Since 1997, there have been ten total licenses available for commercial fishing on Lake Superior. A commercial fishing license is required for any commercial fishing activity. This restricts the size of the commercial fleet (i.e., limited entry) and helps maintain the value of a commercial fishing license.

Commercial fishers are limited by how, when and where they can target and harvest Lake Superior fish. Three main types of gear are allowed in depths less than 330 feet: small-mesh gill nets, large-mesh gill nets and trap nets. Small-mesh gill nets are generally used to target Cisco (Lake Herring) and Chub species and can be between 2 3/8" and 3" mesh size. Large-mesh gill nets are generally used to target Lake Whitefish and Siscowet (Fats) and can be 4 7/16" mesh size or greater. Trap nets are generally used to target Lake Whitefish and can be fished with the pot end of the net in 90 feet or shallower. Small-mesh gill nets may be fished all year. However, for other gear the commercial fishing season is split into three periods: Period 1 (Nov. 28 to March 31), Period 2 (April 1 to May 31) and Period 3 (June 1 to Sept. 30). Large-mesh gill nets are only allowed during these periods (i.e., excludes Lake Trout spawning season), and trap nets are only allowed in Periods 2 and 3. Rules also apply to the height of gill nets, how often nets should be checked or emptied, how nets should be marked and labeled, and more. Pound nets (smaller, entrapment-style nets) and 1.5-inch gill nets are sometimes used for targeting Rainbow Smelt in the spring. Commercial fishing operations are prohibited within the boundaries of two large fishing refuges, Gull Island and Devils Island Refuges, and are either prohibited or limited within ten Restricted Sport Fishing Areas (Figure 1).

The amount of harvest and targeted fishing effort is also limited for commercial fishing in the Wisconsin waters of Lake Superior. Fishers may only operate ten total trap nets at a time, and the amount of large-mesh gill net footage they are allowed to set annually is determined by Lake Trout catch rates observed by onboard commercial monitoring. This provides an incentive for commercial fishers to avoid catching Lake Trout in gill nets (more Lake Trout means less gill net footage is allowed in following years), ultimately creating an upper limit to the gill net harvest of other fish, like Lake Whitefish. Lake Whitefish have a minimum size limit of 17 inches. Lake Trout must also be less than or equal to 25 inches to harvest out of trap nets. Annually, a total allowable catch (TAC) is set for Lake Trout in both management units (WI-1 and WI-2), which represents the maximum number of Lake Trout that can be harvested by all fisheries (i.e., commercial, recreational, home-use, assessment). One-third of the state (non-tribal) allotment of Lake Trout is allocated to commercial fishers, and each commercial fisher receives a specific number of individual Lake Trout jaw tags. When individual commercial fishers run out of either Lake Trout jaw tags or allowable gill net footage, they can not set any more large-mesh gill net in depths less than 330 feet for the remainder of the commercial fishing season. Cisco harvest is limited with an annual TAC and commercial fishing quota. The TAC is determined using hydroacoustic survey estimates of Cisco spawning stock biomass. Targeted commercial Cisco harvest (defined as harvest between Oct. 1 and Dec. 31) is limited to the commercial fishing quota and is monitored

closely. A portion of the overall Cisco TAC is set aside as an allowance for recreational harvest and commercial bycatch throughout the other times of the year. Total effort for large-mesh and small-mesh gill nets fished in depths greater than 330 feet is not regulated and may be fished at any time of the year.

Wisconsin state-licensed commercial fishing is managed using individual transferable quotas (ITQs). This is a common strategy in commercial fishing management and means that the total commercial fishing quota (e.g., Lake Trout, Cisco) or total allowable large-mesh gill net footage is split evenly among the ten commercial fishing licenses. Afterward, fishers are free to trade or sell their individual shares to other license holders. This strategy avoids a derby-style fishery and produces a fishery that is safer for fishers, is more profitable and has a longer fishing season.

METHODS

This report only includes state-licensed commercial fishing effort and harvest. Daily harvest and effort (feet of gill net or trap net lifts) are reported by state-licensed commercial fishers. Additional information provided in reports includes the area fished (Statistical Grid; Figure 1), gear specifications and depths fished.

All effort and harvest statistics were summarized by calendar year, with the exception of the Lake Trout harvest number and quota in Figure 5. The Lake Trout harvest number and quota in Figure 5 are summarized by fishing year, which runs from Nov. 28 to Sept. 30 the following year and is used to track the harvest of the Lake Trout quota. Commercial fishers generally report harvest in dressed weight, and dressed weights are used in this report. Any harvest reported by commercial fishers as round weight was converted to dressed weight using known conversion factors for this report, with the exception of Cisco eggs and Rainbow Smelt. Cisco harvest during the targeted Cisco season (October-December) is tracked and reported in round weight in Figure 6 because the Cisco quota is calculated in round weight.

Effort for gill nets is reported in total feet of net lifted. Effort for trap and pound nets is reported as the number of lifts, and a lift is defined as lifting and emptying the entire pot end of the net.

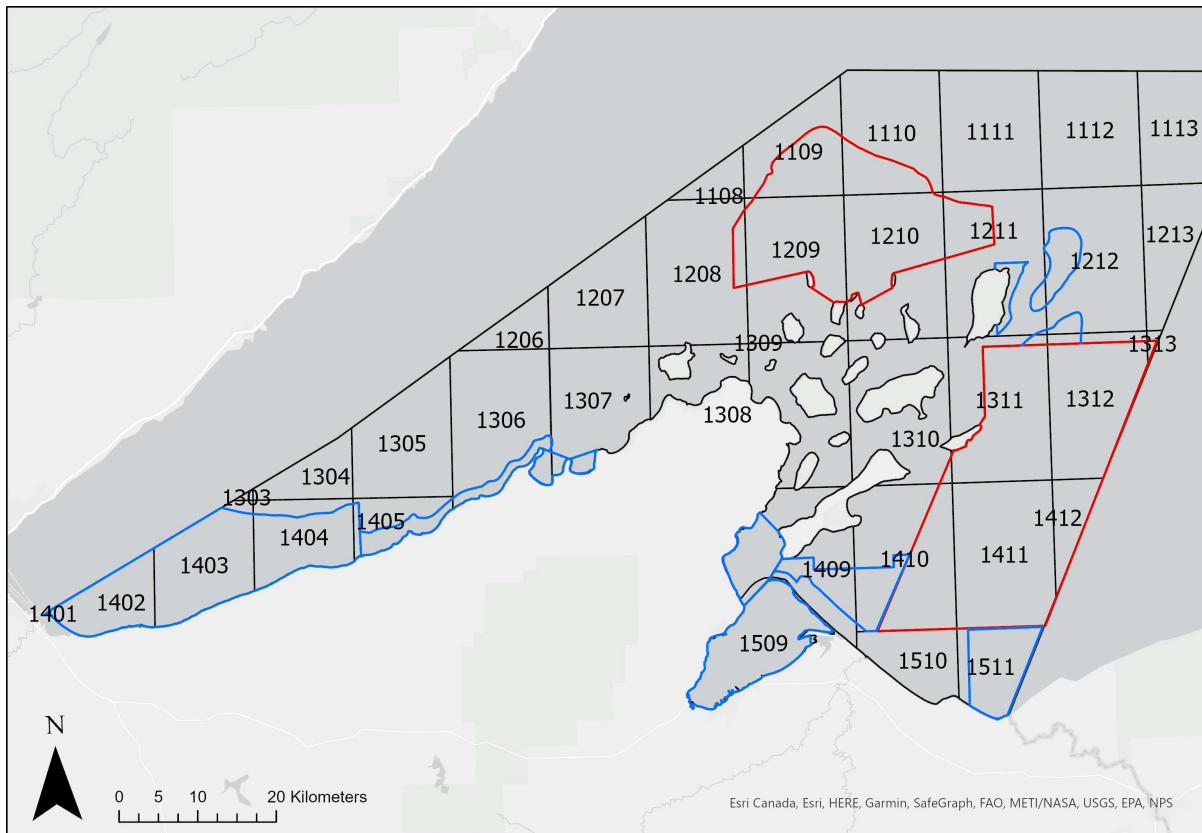


Figure 1. Wisconsin waters of Lake Superior and management units WI-1 (Western Arm) and WI-2 (Apostle Islands Region; line between Grid 1306 and 1307 separates units), statistical grids used for commercial harvest reporting (grey lines and 4-digit numbers), fish refuges (commercial fishing prohibited, red lines) and restricted sport fishing areas (commercial fishing prohibited or limited, blue lines).

RESULTS

During the 2021 calendar year, state-licensed commercial fishermen reported catching annual totals of 438,899 pounds of Lake Whitefish, 30,759 pounds of Lake Trout, 101,032 pounds of Siscowet, 565,405 pounds of Cisco, 1,309 pounds of Cisco eggs, 56,987 pounds of Chubs, 5,809 pounds of Rainbow Smelt and 509 pounds of Burbot (Figure 2, Table 1).

Large-mesh gill net effort targeting Lake Whitefish (< 330 ft. depth) totaled 555,900 feet and caught 71,247 pounds of Lake Whitefish and 10,714 pounds of Lake Trout (Figure 3, Table 2). Large-mesh gill net effort targeting Siscowet (> 330 ft. depth) totaled 479,200 feet of gill net with a resulting harvest of 57,660 pounds (Figure 3, Table 2).

Small-mesh gill net effort targeting Cisco totaled 599,400 feet and caught 537,995 pounds of Cisco and 1,309 pounds of Cisco Eggs (Figure 3, Table 2). Small-mesh gill net effort targeting Chubs (> 210 ft. depth) totaled 1,626,700 feet with a resulting catch of 56,665 pounds of Chubs (Figure 3, Table 2). There was not any small-mesh (1.5-inch) gill net effort targeting Rainbow Smelt.

State-licensed trap net fishers made 784 lifts, producing 367,553 pounds of Lake Whitefish, 17,472 pounds of Lake Trout, 1,901 pounds of Siscowet, 1,138 pounds of Cisco and 440 pounds of Burbot (Figure 3, Table 3). There were 25 small-mesh pound net lifts targeting Rainbow Smelt, with a resulting catch of 5,809 pounds.

Commercial fishers harvested 3,435 of the 4,000 Lake Trout quota in management unit WI-1 and 6,101 of the 6,330 Lake Trout quota in management unit WI-2 in 2021 (Figure 5). Commercial fishers also harvested 656,100 round pounds of the 850,000 round pounds Cisco quota in 2021 (Figure 6).

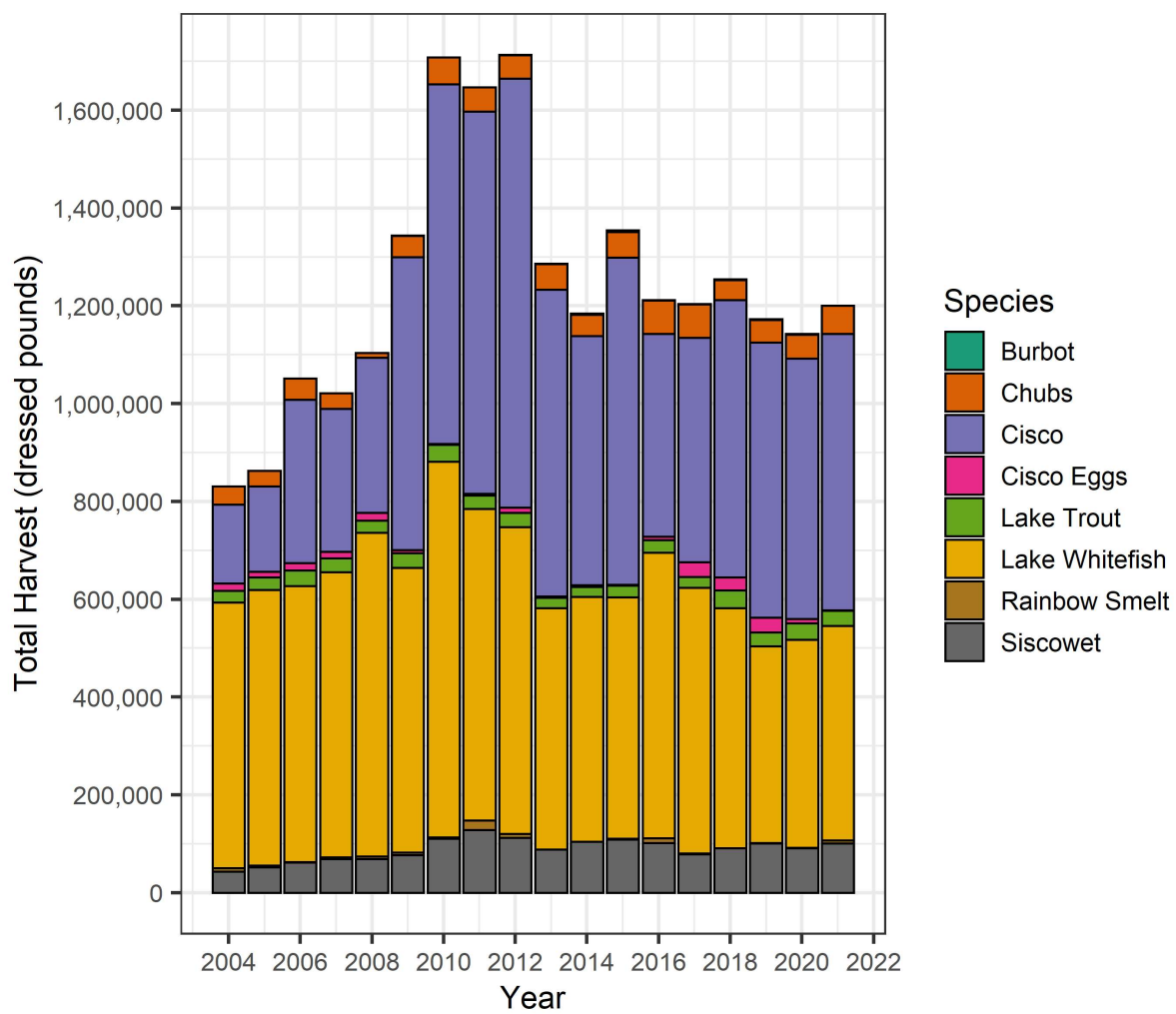


Figure 2. Total reported state-licensed commercial harvest of the chief eight commercially viable species (represented by different colors) in Wisconsin waters of Lake Superior from 2004 to 2021 from all allowable gear types. Harvest is expressed in dressed pounds, except for Cisco eggs and Rainbow Smelt.

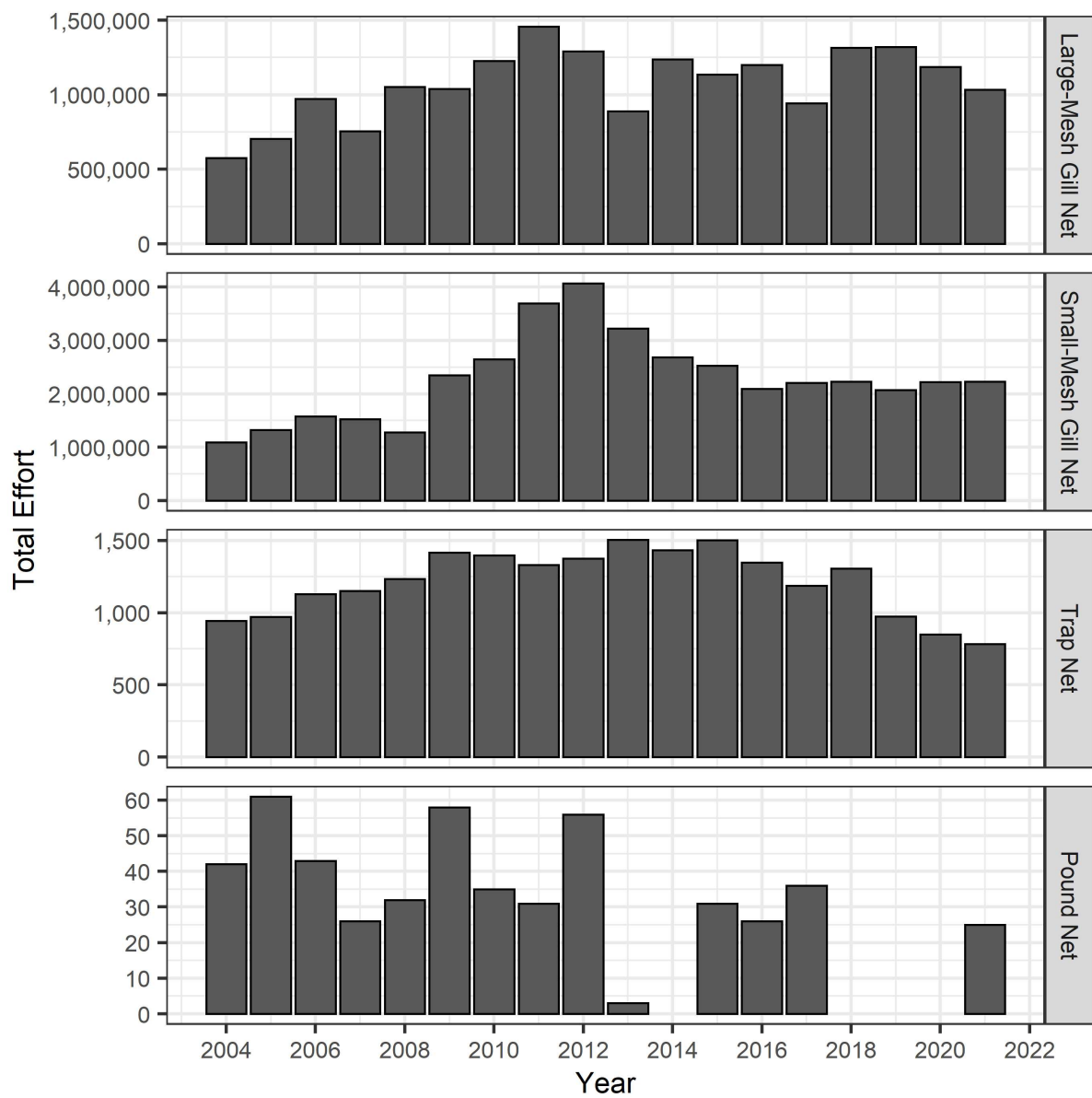


Figure 3. Total reported effort fished by state-licensed commercial fishers in Wisconsin waters of Lake Superior from 2004 to 2021 by gear categorization. Effort for large-mesh gill nets and small-mesh gill nets is represented in total footage of gill net, and effort for trap and pound nets is represented as number of lifts. A lift is defined as the act of lifting up and emptying the pot-end of the trap or pound net.

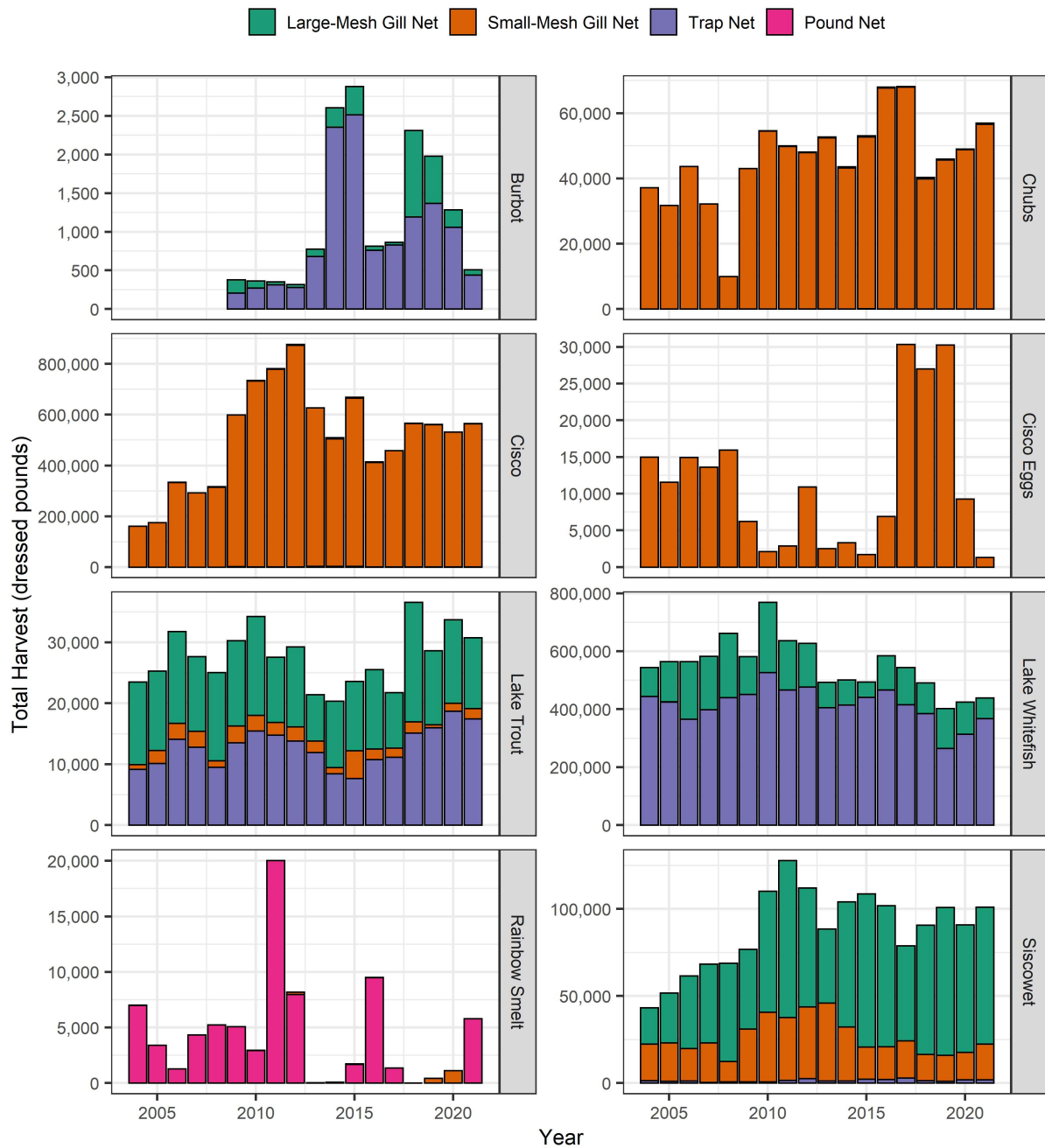


Figure 4. Total reported state-licensed commercial harvest of the chief eight commercially viable species in Wisconsin waters of Lake Superior from 2004 to 2021. Colors represent the gear type used during harvest. Harvest is expressed in dressed pounds, except for Cisco eggs and Rainbow Smelt.

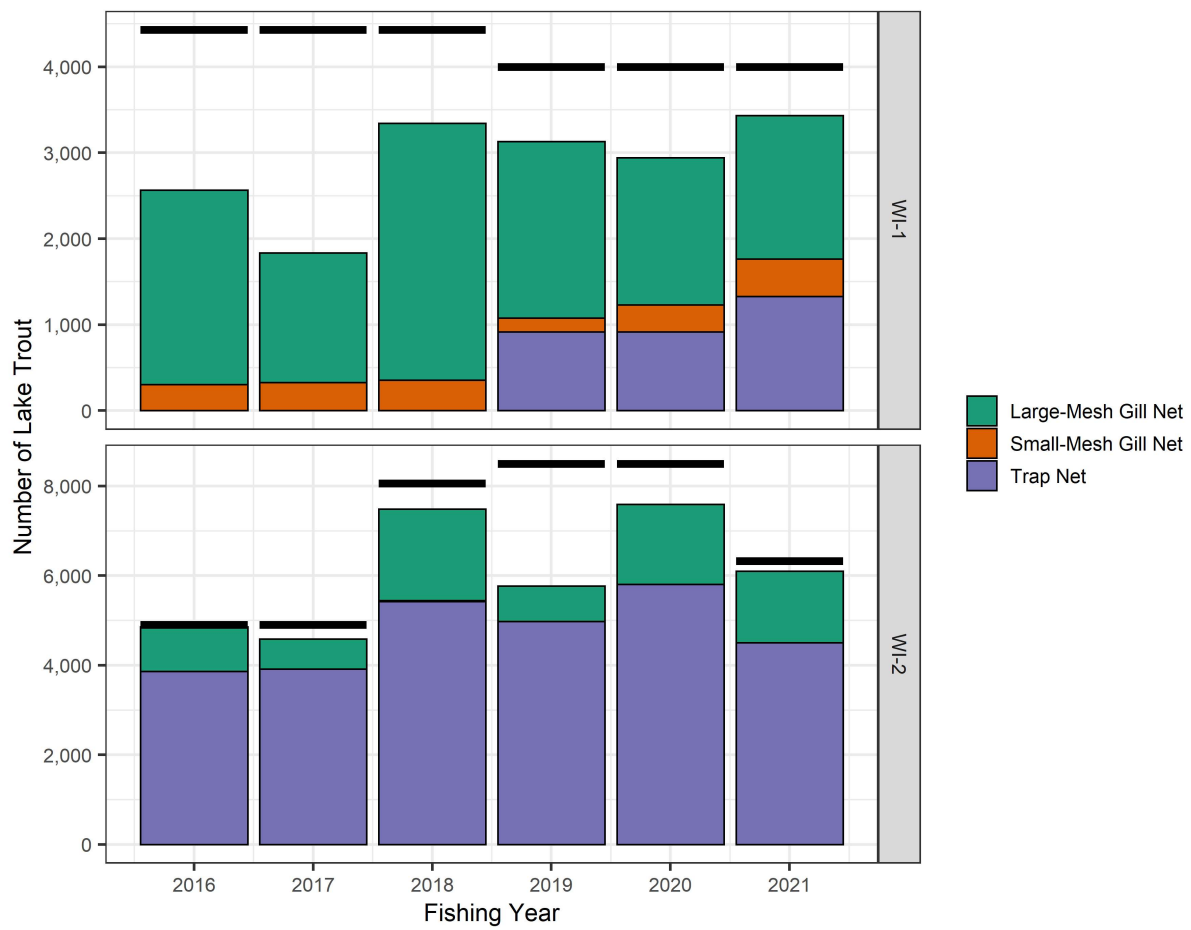


Figure 5. Total reported state-licensed commercial harvest of Lake Trout in Wisconsin waters of Lake Superior from fishing year 2016 (Nov. 28, 2015 - Sep. 30, 2016) to 2021 (Nov. 28, 2020 - Sep. 30, 2021) within each management unit. Harvest is expressed as the actual number of Lake Trout. Colors represent the gear type used during harvest. Black lines represent the quota allotted to the commercial fishery in a given year within each management unit.

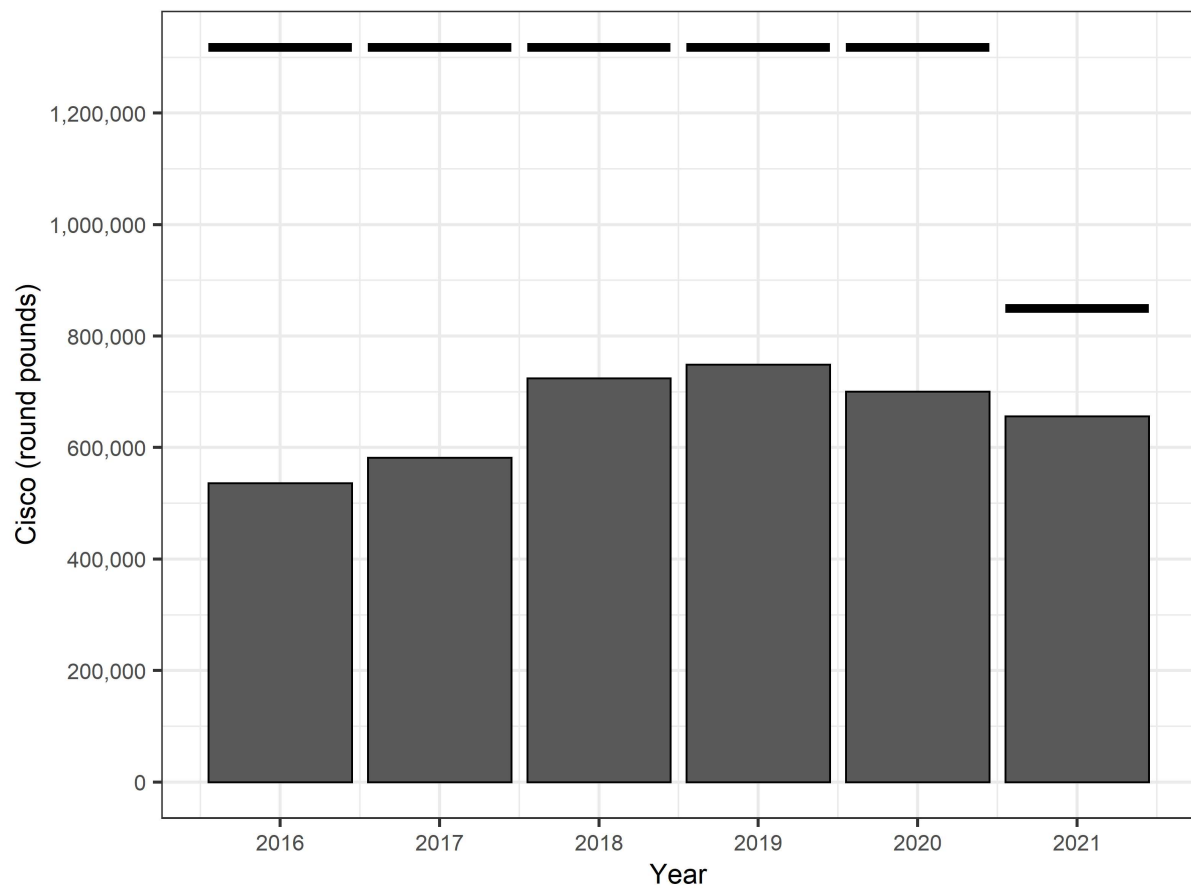


Figure 6. Total reported state-licensed commercial harvest of Cisco (Lake Herring) during the targeted Cisco season (October to December) in Wisconsin waters of Lake Superior from 2016 (first year of quota) to 2021. Harvest is expressed as round pounds of Cisco. Black lines represent the quota allotted to the commercial fishery in a given year in round pounds.

Table 1. Total reported state-licensed commercial harvest of Lake Whitefish, Cisco (Lake Herring), Lake Trout, Siscowet, Chubs, Cisco eggs (roe), Rainbow Smelt and Burbot from all gear in Wisconsin waters of Lake Superior during the 2021 calendar year. All harvest is expressed in dressed weight, except for Cisco eggs and Rainbow Smelt. See Figure 1 for locations of statistical grids.

Gear	Month	Grid	Lake Whitefish	Cisco	Lake Trout	Siscowet	Chubs	Cisco Eggs	Rainbow Smelt	Burbot
All Gears	January	All Grids	19,144	--	2,192	834	--	--	--	42
	March	All Grids	25,879	6,452	2,069	6,416	5,164	--	--	15
	April	All Grids	9,035	4,236	3,598	7,627	8,288	--	5,800	11
	May	All Grids	20,667	3,131	3,605	9,973	6,630	--	9	73
	June	All Grids	44,703	2,048	3,330	11,345	4,086	--	--	79
	July	All Grids	104,794	877	7,395	16,112	2,515	--	--	24
	August	All Grids	109,729	1,153	6,123	10,499	2,765	--	--	155
	September	All Grids	104,215	977	2,067	8,903	4,785	--	--	110
	October	All Grids	--	34,673	--	14,769	14,660	--	--	--
	November	All Grids	--	381,024	--	2,013	8,085	1,078	--	--
	December	All Grids	701	130,834	380	12,541	9	231	--	--
	All Months	1206	--	--	--	2,415	--	--	--	--
		1208	576	840	402	13,454	2,186	--	--	--
		1209	66,214	13	2,126	43	--	--	--	14
		1211	36,102	1	3,039	46	--	--	--	--
		1304	2	11,295	556	6,526	20,362	144	--	--
		1305	1,273	43,038	2,303	46,049	25,986	1,136	--	--
		1306	24,760	3,873	5,962	21,609	7,928	--	--	19
		1307	84,115	323,571	4,995	4,540	482	29	5,809	230
		1308	104,647	319	2,710	672	--	--	--	199
		1309	14,751	8	460	25	--	--	--	42
		1310	42,249	1,819	2,296	5,418	43	--	--	--
		1405	4,134	--	2,638	235	--	--	--	3
		1409	32,726	817	1,157	--	--	--	--	2
		1410	27,317	179,811	2,115	--	--	--	--	--
		All Grids	438,867	565,405	30,759	101,032	56,987	1,309	5,809	509

Table 2. Total reported state-licensed commercial effort (feet of gill net) and harvest of Lake Whitefish, Cisco (Lake Herring), Lake Trout, Siscowet, Chubs, Cisco eggs (roe), Rainbow Smelt and Burbot from gill nets in Wisconsin waters of Lake Superior during the 2021 calendar year. All harvest is expressed in dressed weight, except for Cisco eggs and Rainbow Smelt. See Figure 1 for locations of statistical grids.

Gear	Month	Grid	Effort	Lake Whitefish	Cisco	Lake Trout	Siscowet	Chubs	Cisco Eggs	Rainbow Smelt	Burbot
Gill Net	January	1306	12,000	7,116	--	582	124	--	--	--	--
		1307	15,750	9,945	--	1,113	606	--	--	--	39
		1405	8,000	2,083	--	497	104	--	--	--	3
		All Grids	35,750	19,144	--	2,192	834	--	--	--	42
	March	1304	50,000	--	4,325	412	399	3,186	--	--	--
		1305	70,000	--	1,396	393	5,077	1,513	--	--	--
		1307	58,200	25,879	731	1,264	940	465	--	--	15
		All Grids	178,200	25,879	6,452	2,069	6,416	5,164	--	--	15
	April	1305	149,500	645	2,018	1,032	5,423	4,291	--	--	--
		1306	126,750	785	1,748	657	1,819	3,997	--	--	--
		1307	18,300	5,364	470	301	308	--	--	--	11
		1405	23,100	1,589	--	1,601	77	--	--	--	--
		1409	6,000	652	--	7	--	--	--	--	--
		All Grids	323,650	9,035	4,236	3,598	7,627	8,288	--	--	11
	May	1304	7,000	--	100	8	65	226	--	--	--
		1305	149,000	110	1,224	236	1,203	4,201	--	--	--
		1306	127,500	520	570	692	5,954	2,201	--	--	--
		1307	8,300	2,016	556	149	166	2	--	--	1
		1310	118,500	6,816	--	1,107	2,500	--	--	--	--
		1405	14,800	462	--	540	54	--	--	--	--
		1409	21,500	925	--	115	--	--	--	--	--
		All Grids	446,600	10,849	2,450	2,847	9,942	6,630	--	--	1
	June	1208	38,000	55	120	--	2,195	615	--	--	--
		1305	113,500	5	707	97	2,329	1,808	--	--	--
		1306	127,500	5	810	138	5,205	1,620	--	--	--
		1310	63,000	3,012	--	425	1,463	43	--	--	--
		All Grids	342,000	3,077	1,637	660	11,192	4,086	--	--	--
	July	1206	12,000	--	--	--	765	--	--	--	--
		1208	132,000	521	720	402	11,259	1,571	--	--	--
		1305	60,000	--	141	9	484	938	--	--	--
		1306	24,000	--	--	33	2,120	--	--	--	--
		1307	13,500	417	--	595	334	6	--	--	--
		1310	20,000	460	--	49	713	--	--	--	--
		All Grids	261,500	1,398	861	1,088	15,675	2,515	--	--	--
	August	1206	18,000	--	--	--	1,650	--	--	--	--
		1304	92,000	--	1,030	45	866	1,655	--	--	--
		1305	64,500	55	--	37	678	1,000	--	--	--
		1306	76,000	--	115	10	5,940	110	--	--	--
		1310	23,000	716	--	106	742	--	--	--	--
		All Grids	273,500	771	1,145	198	9,876	2,765	--	--	--
	September	1304	124,000	2	940	91	1,336	3,540	--	--	--
		1305	116,500	458	15	164	6,910	1,245	--	--	--
		All Grids	240,500	460	955	255	8,246	4,785	--	--	--
	October	1304	158,000	--	3,315	--	3,275	7,360	--	--	--
		1305	237,000	--	2,965	--	11,325	7,300	--	--	--
		1307	12,000	--	11,662	--	169	--	--	--	--
		1410	50,000	--	16,732	--	--	--	--	--	--
		All Grids	457,000	--	34,673	--	14,769	14,660	--	--	--
	November	1304	46,000	--	1,585	--	585	4,395	144	--	--
		1305	98,500	--	18,294	--	1,120	3,690	911	--	--
		1307	186,400	--	219,977	--	308	--	23	--	--
		1310	5,000	--	1,308	--	--	--	--	--	--
		1409	2,000	--	812	--	--	--	--	--	--
		1410	207,000	--	139,047	--	--	--	--	--	--
		All Grids	544,900	--	381,024	--	2,013	8,085	1,078	--	--
	December	1305	68,000	--	16,278	335	11,500	--	225	--	--
		1307	63,600	701	90,013	45	1,041	9	6	--	--
		1310	2,000	--	511	--	--	--	--	--	--
		1410	24,000	--	24,032	--	--	--	--	--	--
		All Grids	157,600	701	130,834	380	12,541	9	231	--	--
	All Months	1206	30,000	--	--	--	2,415	--	--	--	--
		1208	170,000	576	840	402	13,454	2,186	--	--	--
		1304	477,000	2	11,295	556	6,526	20,362	144	--	--
		1305	1,126,500	1,273	43,038	2,303	46,049	25,986	1,136	--	--
		1306	493,750	8,426	3,243	2,112	21,162	7,928	--	--	--

1307	376,050	44,322	323,409	3,467	3,872	482	29	--	66
1310	231,500	11,004	1,819	1,687	5,418	43	--	--	--
1405	45,900	4,134	--	2,638	235	--	--	--	3
1409	29,500	1,577	812	122	--	--	--	--	--
1410	281,000	--	179,811	--	--	--	--	--	--
All Grids	3,261,200	71,314	564,267	13,287	99,131	56,987	1,309	--	69

Table 3. Total reported state-licensed commercial effort (entrapment net lifts) and harvest of Lake Whitefish, Cisco (Lake Herring), Lake Trout, Siscowet, Chubs, Rainbow Smelt and Burbot from entrapment nets in Wisconsin waters of Lake Superior during the 2021 calendar year. All harvest is expressed in dressed weight. See Figure 1 for locations of statistical grids.

Gear	Month	Grid	Effort	Lake Whitefish	Cisco	Lake Trout	Siscowet	Chubs	Rainbow Smelt	Burbot
Entrapment Net	April	1307	23	--	--	--	--	--	5,800	--
		All Grids								
	May	1306	10	333	546	244	--	--	--	5
		1307	19	5,189	53	234	19	--	9	41
		1308	15	4,296	82	280	12	--	--	26
		All Grids	44	9,818	681	758	31	--	9	72
	June	1209	13	5,393	12	329	4	--	--	5
		1211	9	1,391	--	601	10	--	--	--
		1306	10	1,406	81	345	38	--	--	--
		1307	28	8,107	97	146	75	--	--	29
		1308	31	12,302	210	473	26	--	--	37
		1309	4	2,055	6	88	--	--	--	6
		1409	28	5,951	5	242	--	--	--	2
		1410	22	5,021	--	446	--	--	--	--
		All Grids	145	41,626	411	2,670	153	--	--	79
	July	1209	20	18,783	1	909	1	--	--	--
		1211	15	2,916	1	1,130	22	--	--	--
		1306	10	2,566	--	1,248	177	--	--	2
		1307	22	12,855	4	424	108	--	--	14
		1308	35	36,363	10	703	118	--	--	8
		1309	6	5,921	--	205	11	--	--	--
		1310	9	1,047	--	214	--	--	--	--
		1409	33	12,801	--	473	--	--	--	--
		1410	49	10,143	--	1,001	--	--	--	--
		All Grids	199	103,396	16	6,307	437	--	--	24
	August	1209	19	23,551	--	783	12	--	--	7
		1211	21	14,394	--	1,286	5	--	--	--
		1306	8	1,973	1	1,206	131	--	--	--
		1307	24	6,287	1	485	178	--	--	30
		1308	41	33,635	4	974	289	--	--	86
		1309	8	5,297	2	141	8	--	--	32
		1310	15	6,316	--	246	--	--	--	--
		1409	23	11,623	--	273	--	--	--	--
		1410	37	5,882	--	531	--	--	--	--
		All Grids	196	108,958	8	5,925	623	--	--	155
	September	1209	33	18,487	--	105	26	--	--	2
		1211	25	17,401	--	22	9	--	--	--
		1306	16	10,056	2	807	101	--	--	12
		1307	26	7,355	7	239	288	--	--	50
		1308	37	18,051	13	280	227	--	--	42
		1309	5	1,477	--	26	6	--	--	4
		1310	36	23,882	--	149	--	--	--	--
		1409	4	774	--	47	--	--	--	--
		1410	20	6,271	--	137	--	--	--	--
		All Grids	202	103,755	22	1,812	657	--	--	110
	All Months	1209	85	66,214	13	2,126	43	--	--	14
		1211	70	36,102	1	3,039	46	--	--	--
		1306	54	16,334	630	3,850	447	--	--	19
		1307	142	39,793	162	1,528	668	--	5,809	164
		1308	159	104,647	319	2,710	672	--	--	199
		1309	23	14,751	8	460	25	--	--	42
		1310	60	31,245	--	609	--	--	--	--
		1409	88	31,149	5	1,035	--	--	--	2
		1410	128	27,317	--	2,115	--	--	--	--
		All Grids	809	367,553	1,138	17,472	1,901	--	5,809	440